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October 20, 2000

ATTORNEY DOCKET NO.: 05725.0793-00000

BOX PATENT APPLICATION  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Re: New U.S. Patent Application

Title: COSMETIC COMPOSITIONS COMPRISING AT LEAST ONE  
SILICONE COPOLYMER AND AT LEAST ONE CONDITIONER,  
AND USES THEREOF

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Sir:

We enclose the following papers for filing in the United States Patent and Trademark Office in connection with the above patent application.

1. Application - 66 pages, including title page and abstract, and including 5 independent claims and 95 claims total.
2. Information Disclosure Statement Under 37 C.F.R. § 1.97(b)/Form PTO 1449/French Search Report/Documents (20).
3. Claim for Priority/Certified copy of French Patent Application No. 99 13097, filed October 20, 1999.
4. A check for \$2,220.00 representing a \$710.00 filing fee and \$1,510.00 for additional claims.

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This application is being filed under the provisions of 37 C.F.R. § 1.53(b) and (f).  
Applicants await notification from the Patent and Trademark Office of the time set for filing the  
executed Declaration.

**Please accord this application a serial number and filing date.**

The Commissioner is hereby authorized to charge any additional filing fees due and  
any other fees due under 37 C.F.R. § 1.16 or § 1.17 during the pendency of this application to  
our Deposit Account No. 06-0916.

Respectfully submitted,

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By: 

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MLM/pag

Enclosures

**ATTORNEY DOCKET NO. 05725.0793-00000**

**UNITED STATES PATENT APPLICATION**

**OF**

**Sandrine DECOSTER,**

**Véronique DOUIN, and**

**Virginie BAILLY**

**FOR**

**COSMETIC COMPOSITIONS COMPRISING**

**AT LEAST ONE SILICONE COPOLYMER AND**

**AT LEAST ONE CONDITIONER, AND USES THEREOF**

The present invention relates to novel cosmetic compositions comprising, in a cosmetically acceptable medium, at least one silicone copolymer defined below, with a dynamic viscosity ranging from  $1 \times 10^6$  to  $100 \times 10^6$  cP and at least one specific conditioner.

5 It is well known that hair that has been sensitized (i.e. damaged and/or embrittled) to varying degrees under the action of atmospheric agents or mechanical or chemical treatments, such as dyes, bleaches and/or permanent-waving, can be often difficult to disentangle and to style, and may lack softness.

10 It has already been recommended to use conditioners, in particular cationic polymers or silicones, in compositions for washing or caring for keratin materials such as the hair, in order to facilitate the disentangling of the hair and to give it softness and suppleness. However, the cosmetic advantages mentioned above can be accompanied, on dried hair, by certain cosmetic effects considered undesirable, i.e., lankness of the hairstyle (lack of lightness of the hair) and lack of smoothness (hair not  
15 uniform from the root to the tip).

In addition, the use of cationic polymers for this purpose may have various drawbacks. On account of their high affinity for the hair, some of these polymers can become deposited thereon to a large extent during repeated use, and may lead to adverse effects such as an unpleasant, laden feel, stiffening of the hair and interfiber  
20 adhesion which may affect styling. These drawbacks may be more accentuated in the case of fine hair, which lacks liveliness and body.

In summary, it is found that the current cosmetic compositions comprising conditioners are not always entirely satisfactory.

The inventors have now discovered that the combination of at least one silicone copolymer defined below, with a dynamic viscosity ranging from  $1 \times 10^6$  to  $100 \times 10^6$  cP, with at least one conditioner makes it possible to overcome at least one of these drawbacks.

Thus, after considerable research conducted in this matter, the inventors have found that by introducing at least one silicone copolymer with a dynamic viscosity ranging from  $1 \times 10^6$  to  $100 \times 10^6$  cP, into compositions, such as hair compositions containing at least one conditioner, it is possible to limit, or even eliminate, at least one of the problems generally associated with the use of such compositions, i.e., for example, the lankness (charged feel following repeated applications) and the lack of smoothness and softness of the hair, while at the same time retaining at least one of the other advantageous cosmetic properties which are associated with conditioner-based compositions.

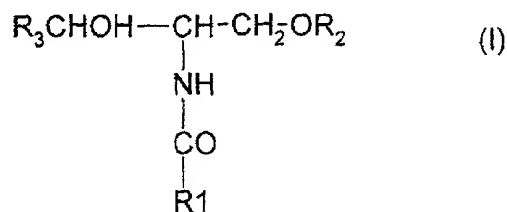
Moreover, when applied to the skin, for example in the form of a bubble bath or shower gel, the compositions of the invention can provide an improvement in the softness of the skin.

Thus, according to the present invention, cosmetic compositions are now proposed comprising, in a cosmetically acceptable medium, at least one silicone copolymer defined below, wherein said copolymer has a dynamic viscosity ranging from  $1 \times 10^6$  to  $100 \times 10^6$  cP, and at least one conditioner.

Thus, according to the present invention, novel cosmetic compositions are now proposed comprising, in a cosmetically acceptable medium, at least one silicone

copolymer defined below, with a viscosity of between  $1 \times 10^6$  and  $100 \times 10^6$  cP, and at least one conditioner chosen from:

- synthetic oils;
- animal oils;
- plant oils;
- fluoro oils;
- perfluoro oils;
- natural waxes;
- synthetic waxes; and
- ceramides of formula (I):



wherein:

- $R_1$  is chosen from linear and branched, saturated and unsaturated alkyl groups derived from at least one  $C_{14}$ - $C_{30}$  fatty acid, wherein said  $R_1$  is optionally substituted with at least one hydroxyl group in the  $\alpha$  position, and wherein said  $R_1$  is optionally substituted with at least one hydroxyl group in the  $\omega$  position wherein said at least one hydroxyl group is esterified with at least one group chosen from saturated and

unsaturated C<sub>16</sub>-C<sub>30</sub> fatty acids;

- R<sub>2</sub> is chosen from a hydrogen atom, (glycosyl)<sub>n</sub> groups, (galactosyl)<sub>m</sub> groups and sulphogalactosyl groups, wherein n is an integer ranging from 1 to 4 and m is an integer ranging from 1 to 8;

5 - R<sub>3</sub> is chosen from C<sub>15</sub>-C<sub>26</sub> hydrocarbon-based groups, optionally saturated in the α position, wherein said R<sub>3</sub> is optionally substituted with at least one C<sub>1</sub>-C<sub>14</sub> alkyl group;

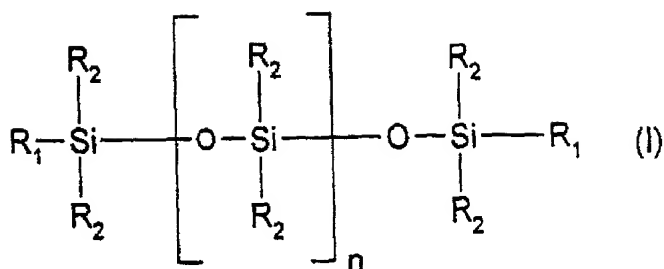
with the proviso that when said ceramides of formula (I) are chosen from natural ceramides and natural glycosceramides, R<sub>3</sub> may also be chosen from C<sub>15</sub>-C<sub>26</sub> α - hydroxyalkyl groups wherein the hydroxyl group is optionally esterified with at least one C<sub>16</sub>-C<sub>30</sub> α -hydroxy acid group.

Another subject of the invention relates to the use of at least one silicone copolymer defined below, with a dynamic viscosity ranging from 1 x 10<sup>6</sup> to 100 x 10<sup>6</sup> cP, in, or for the manufacture of, a cosmetic composition comprising at least one conditioner.

The various subjects of the invention will now be described in detail. All the meanings and definitions of the compounds used in the present invention given below are valid for all the subjects of the invention.

The at least one silicone copolymer results from the addition reaction, in the presence of a catalyst, of at least:

- (a) one polysiloxane of formula (I):



in which:

-  $\text{R}_1$ , which may be identical or different, are independently chosen from groups that can react by chain addition reaction such as, for example, a hydrogen atom or aliphatic groups comprising an ethylenic unsaturation, such as vinyl, allyl and hexenyl groups;

-  $\text{R}_2$  in formula (I), which may be identical or different, are independently chosen from hydroxyl, alkyl, alkenyl, cycloalkyl, aryl, and alkylaryl groups, and can optionally further comprise functional groups chosen from ethers, amines, carboxyls, hydroxyls, thiols, esters, sulfonates and sulfates; wherein:

- the alkyl groups comprise, for example, 1 to 20 carbon atoms; the alkenyl groups comprise, for example, from 2 to 10 carbon atoms; the cycloalkyl groups comprise, for example, 5 or 6 carbon atoms; the aryl groups comprise, for example, phenyl groups; and the alkylaryl groups comprise, for example, from 7 to 20 carbon atoms;

- In one embodiment,  $\text{R}_2$  is chosen from methyl.

-  $n$  is an integer wherein the polysiloxane of formula (I) has a kinematic viscosity ranging from 1 to  $1 \times 10^6$  mm<sup>2</sup>/s, for example,  $n$  may range from 5 to 5000; and

- (b) at least one silicone compound comprising at least one and not more than two



groups capable of reacting with the groups  $R_1$  of the polysiloxane (a), wherein:

- at least one of the compounds of type (a) and (b) comprises an aliphatic group, such as a  $C_2$ - $C_6$  aliphatic group, comprising an ethylenic unsaturation.

The compounds of type (b) can be another polysiloxane of type (a) in which at least one and not more than two groups  $R_1$  of the polysiloxane (b) can react with the groups  $R_1$  of the polysiloxane (a).

In one embodiment, the at least one silicone copolymer is obtained by addition reaction, in the presence of a hydrosilylation catalyst (for example a platinum catalyst), of at least:

- (a) one  $\alpha,\omega$ -divinylpolydimethylsiloxane, and
- (b) one  $\alpha,\omega$ -dihydrogenopolydimethylsiloxane.

The silicone copolymer generally has a dynamic viscosity, measured at a temperature of about 25°C and at a shear rate of 0.01 Hz for a stress of 1500 Pa, ranging from  $1 \times 10^6$  to  $100 \times 10^6$  cP, such as ranging from  $5 \times 10^6$  cP to  $30 \times 10^6$  cP.

All the dynamic viscosity measurements given in the present patent application were taken at a temperature of about 25°C, on a Carri-Medium CSL2-500 machine.

The kinematic viscosity is measured, for example, at 25°C according to ASTM standard 445 Appendix C.

The at least one silicone copolymer according to the invention is essentially non-crosslinked, i.e., not crosslinked to an extent sufficient to be referred to as a crosslinked copolymer.

Another subject of the invention relates to compositions wherein the at least one silicone copolymer present in the composition is in the form of an aqueous emulsion.

The expression "aqueous emulsion" means an emulsion of oil-in-water type in which the at least one silicone copolymer is dispersed, such as in the form of particles or droplets, in the aqueous phase forming the continuous phase of the emulsion. This emulsion can be stabilized with a common emulsifying system.

5 This silicone emulsion can have a silicone droplet or particle size ranging from 10 nm to 50  $\mu\text{m}$ , such as from 0.3  $\mu\text{m}$  to 20  $\mu\text{m}$ . The particle size is measured by laser granulometry.

10 The emulsifying system comprises at least one surfactant commonly used in silicone emulsions. These surfactants may be nonionic, cationic, anionic or amphoteric, or mixtures thereof, such as those described below.

The emulsifying system represents, for example, from 0.5% to 10% by weight relative to the total weight of the emulsion.

The synthesis of these silicone emulsions is described for example in patent application EP-A-874 017, the disclosure of which is incorporated by reference herein.

15 Such emulsions are sold for example under the name DC2-1997 Cationic Emulsion by the company Dow Corning. This emulsion comprises an  $\alpha,\omega$ -divinyl-dimethicone/ $\alpha,\omega$ -dihydrogenodimethicone copolymer with a dynamic viscosity of about  $15 \times 10^6$  cP, an emulsifier of cationic type such as cetyltrimethylammonium chloride, a stabilizer such as hydroxyethylcellulose, and water.

20 The at least one silicone copolymer can be present in a representative amount ranging from 0.05% to 10% by weight relative to the total weight of the composition, such as from 0.1% to 5% by weight relative to the total weight of the composition.

The aqueous emulsion of the at least one silicone copolymer can be present in a

representative amount ranging from 0.5% to 15% by weight relative to the total weight of the composition.

According to the present invention, the at least one conditioner may be in liquid, semi-solid or solid form, such as, for example, oils, waxes or gums.

5        Suitable synthetic oils may be chosen from polyolefins, such as poly- $\alpha$ -olefins and further such as polyolefins of hydrogenated polybutene type and polyolefins of non-hydrogenated polybutene type. For example, suitable synthetic oils include hydrogenated polyisobutene and non-hydrogenated polyisobutene.

10        For example, the at least one conditioner may be chosen from isobutylene oligomers having a molecular weight of less than 1000 and mixtures of at least one isobutylene oligomer having a molecular weight of less than 1000 with at least one polyisobutylene having a molecular weight of greater than 1000, such as from 1000 to 15,000.

15        Non-limiting examples of poly- $\alpha$ -olefins which can be used in the present invention include the products sold under the names Permethyl 99 A, 101 A, 102 A, 104 A ( $n=16$ ) and 106 A ( $n=38$ ) by the company Presperse Inc. and the products sold under the name Arlamol HD ( $n=3$ ) by the company ICI (wherein  $n$  denotes the degree of polymerization).

20        Additional non-limiting examples of suitable synthetic oils include polyolefins of hydrogenated polydecene type and polyolefins of non-hydrogenated polydecene type. Such products are sold, for example, under the names Ethylflo by the company Ethyl Corp. and Arlamol PAO by the company ICI.

The animal and plant oils may be chosen from sunflower oil, corn oil, soybean

oil, avocado oil, jojoba oil, marrow oil, grapeseed oil, sesame oil, hazelnut oil, fish oils, glyceryl tricaprocaprylate and plant oils of formula  $R_9COOR_{10}$  and animal oils of formula  $R_9COOR_{10}$  wherein  $R_9$  is chosen from higher fatty acid residues comprising from 7 to 29 carbon atoms and  $R_{10}$  is chosen from linear and branched hydrocarbon-based chains comprising from 3 to 30 carbon atoms, such as, for example, alkyl groups and alkenyl groups. Non-limiting examples of oils of formula  $R_9COOR_{10}$  include purcellin oil and liquid jojoba wax.

Further, according to the present invention, it may be possible to use natural essential oils and synthetic essential oils such as, for example, eucalyptus oil, hybrid lavender oil, lavender oil, vetiver oil, Litsea cubeba oil, lemon oil, sandalwood oil, rosemary oil, camomile oil, savory oil, nutmeg oil, cinnamon oil, hyssop oil, caraway oil, orange oil, geraniol oil, cade oil and bergamot oil.

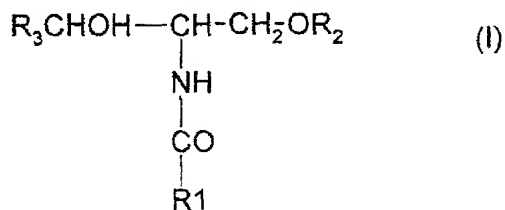
Suitable waxes may be chosen from natural (i.e. animal and plant) substances that are solid at room temperature (20°-25°C) and synthetic substances that are solid at room temperature (20°-25°C). Waxes suitable for use in the present invention may be insoluble in water, soluble in oils and may be capable of forming a water-repellent film.

A definition of waxes may be found, for example, in P.D. Dorgan, Drug and Cosmetic Industry, December 1983, pp. 30-33, the disclosure of which is incorporated herein by reference.

According to the present invention, natural and synthetic waxes comprise carnauba wax, candelilla wax, alfalfa wax, paraffin wax, ozokerite, plant waxes (such as olive tree wax, rice wax, and hydrogenated jojoba wax) and the absolute waxes of flowers (such as the essential wax of blackcurrant flower sold by the company Bertin

(France)) and animal waxes (such as beeswaxes and modified beeswaxes (cerabellina)). Other waxes and waxy starting materials which can be used according to the present invention include marine waxes (such as the product sold by the company Sophim under the reference M82), polyethylene waxes and polyolefins in general.

According to the present invention, ceramide-type compounds may be used as the at least one conditioner. The ceramide-type compounds may be chosen from ceramides of formula (I) which comprise natural ceramides of formula (I), synthetic ceramides of formula (I), natural glycosceramides of formula (I), synthetic glycosceramides of formula (I), natural pseudoceramides of formula (I), synthetic pseudoceramides of formula (I), natural neoceramides of formula (I) and synthetic neoceramides of formula (I), and wherein formula (I) has the following structure:



wherein:

- R<sub>1</sub> is chosen from linear and branched, saturated and unsaturated alkyl

groups derived from at least one  $C_{14}$ - $C_{30}$  fatty acid, wherein said  $R_1$  is optionally substituted with at least one hydroxyl group in the  $\alpha$  position, and wherein said  $R_1$  may optionally be substituted with at least one hydroxyl group in the  $\omega$  position wherein said at least one hydroxyl group is esterified with at least one group chosen from saturated and unsaturated  $C_{16}$ - $C_{30}$  fatty acids;

-  $R_2$  is chosen from a hydrogen atom, (glycosyl) $_n$  groups, (galactosyl) $_m$  groups and sulphogalactosyl groups, wherein  $n$  is an integer ranging from 1 to 4 and  $m$  is an integer ranging from 1 to 8;

-  $R_3$  is chosen from  $C_{15}$ - $C_{26}$  hydrocarbon-based groups, optionally saturated in the  $\alpha$  position, wherein said  $R_3$  is optionally substituted with at least one  $C_1$ - $C_{14}$  alkyl group;

with the proviso that when said ceramides of formula (I) are chosen from natural ceramides and natural glycosceramides,  $R_3$  may also be chosen from  $C_{15}$ - $C_{26}$   $\alpha$ -hydroxyalkyl groups wherein the hydroxyl group is optionally esterified with at least one  $C_{16}$ - $C_{30}$   $\alpha$ -hydroxy acid group.

In one embodiment,  $R_1$  is chosen from linear and branched, saturated and unsaturated alkyl groups derived from at least one  $C_{16}$ - $C_{22}$  fatty acid,  $R_2$  is a hydrogen atom and  $R_3$  is chosen from saturated linear  $C_{15}$  hydrocarbon-based groups. Non-limiting examples of such ceramides are:

- N-linoleyldihydrosphingosine,
- N-oleyldihydrosphingosine,
- N-palmitoyldihydrosphingosine,
- N-stearyldihydrosphingosine,

- N-behenyldihydrosphingosine and mixtures of any of the foregoing.

In another embodiment,  $R_1$  is chosen from saturated and unsaturated alkyl groups derived from at least one  $C_{14}$ - $C_{30}$  fatty acid,  $R_2$  is chosen from (galactosyl)<sub>n</sub> groups and sulphogalactosyl groups and  $R_3$  is a  $-CH=CH-(CH_2)_{12}-CH_3$  group.

5 For example, the at least one conditioner may be chosen from the product sold under the trade name Glycocer by the company Waitaki International Biosciences.

In yet another embodiment, ceramide-type compounds of formula (I) are chosen from:

- 2-N-linoleylaminooctadecane-1,3-diol,
- 2-N-oleylaminooctadecane-1,3-diol,
- 2-N-palmitoylaminooctadecane-1,3-diol,
- 2-N-stearylaminooctadecane-1,3-diol,
- 2-N-behenylaminooctadecane-1,3-diol,
- 2-N-[2-hydroxypalmitoyl]aminooctadecane-1,3-diol,
- 2-N-stearylaminooctadecane-1,3,4-triol
- N-stearylphytosphingosine,
- 2-N-palmitoylaminohexadecane-1,3-diol and mixtures of any of the

foregoing.

Non-limiting examples of suitable fluoro oils according to the present invention include the perfluoropolyethers described in patent application EP-A-486,135, the disclosure of which is incorporated herein by reference, and the fluorohydrocarbon compounds described in patent application WO 93/11103, the disclosure of which is incorporated herein by reference. Other suitable perfluoropolyethers are sold under the

trade names Fomblin by the company Montefluos and Krytox by the company Du Pont.

As used herein, "fluorohydrocarbon compounds" refers to compounds comprising a carbon skeleton wherein at least one hydrogen atom has been replaced with a fluorine atom.

5 The fluoro oils may also be chosen from fluoroamines (such as perfluorotributylamine), fluorohydrocarbons (such as perfluorodecahydronaphthalene), fluoro esters and fluoro ethers.

10 Fluorohydrocarbon compounds may also be chosen from fluorine-comprising fatty acid esters, such as the product sold under the name Nofable FO by the company Nippon Oil.

According to the present invention, the at least one conditioner is present in an amount generally ranging from 0.001% to 20% by weight, such as from 0.01% to 10% by weight and further such as from 0.1% to 3% by weight, relative to the total weight of the final composition.

15 The compositions of the invention can also comprise at least one surfactant chosen from anionic, amphoteric and nonionic surfactants, which is generally present in an amount ranging from approximately 0.1% to 60% by weight relative to the total weight of the composition, such as from 3% to 40% and further such as from 5% to 30%.

20 The at least one surfactant chosen from anionic, amphoteric and nonionic surfactants, which are suitable for carrying out the present invention are, for example, the following:



(i) Anionic surfactant(s):

In the context of the present invention, their nature is not of critical importance.

Representative anionic surfactants include salts (for example alkaline salts, such as sodium salts, ammonium salts, amine salts, amino alcohol salts and magnesium salts) of the following compounds: alkyl sulfates, alkyl ether sulfates, alkylamidoether sulfates, alkylaryl polyether sulfates, monoglyceride sulfates; alkyl sulfonates, alkyl phosphates, alkylamide sulfonates, alkylaryl sulfonates,  $\alpha$ -olefin sulfonates, paraffin sulfonates; alkyl sulfosuccinates, alkyl ether sulfosuccinates, alkylamide sulfosuccinates; alkyl sulfosuccinamates; alkyl sulfoacetates; alkyl ether phosphates; acyl sarcosinates; acyl isethionates and N-acyltaurates. The alkyl and acyl radicals of all of these various compounds can for example comprise from 8 to 24 carbon atoms, and the aryl radicals can for example be chosen from phenyl and benzyl groups.

For example, anionic surfactants can be chosen from fatty acid salts such as the salts of oleic, ricinoleic, palmitic and stearic acids, coconut oil acid and hydrogenated coconut oil acid and acyl lactylates in which the acyl radical comprises from 8 to 20 carbon atoms. At least one weakly anionic surfactant can also be used, such as alkyl-D-galactosiduronic acids and their salts, as well as polyoxyalkylenated ( $C_6$ - $C_{24}$ ) alkyl ether carboxylic acids, polyoxyalkylenated ( $C_6$ - $C_{24}$ ) alkylaryl ether carboxylic acids, polyoxyalkylenated ( $C_6$ - $C_{24}$ ) alkylamido ether carboxylic acids and their salts, for example, those comprising from 2 to 50 ethylene oxide groups.

As a further example, the anionic surfactant can be at least one salt chosen from alkyl sulfate salts and alkyl ether sulfate salts.

(ii) Nonionic surfactant(s):

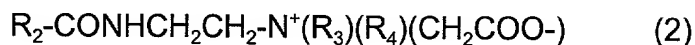
Useful nonionic surfactants include compounds that are well known per se (see for example in this respect "Handbook of Surfactants" by M.R. Porter, published by Blackie & Son (Glasgow and London), 1991, pp. 116-178), the disclosure of which is incorporated by reference herein, and, in the context of the present invention, their nature is not a critical feature. Thus, nonionic surfactants can include polyethoxylated, polypropoxylated and polyglycerolated fatty acids, alkylphenols,  $\alpha$ -diols and alcohols having a fatty aliphatic chain comprising, for example, 8 to 18 carbon atoms, it being possible for the number of ethylene oxide and propylene oxide groups to range for example from 2 to 50 and for the number of glycerol groups to range for example from 2 to 30. Mention may also be made of copolymers of ethylene oxide and of propylene oxide, condensates of ethylene oxide and of propylene oxide with fatty alcohols; polyethoxylated fatty amides for example comprising from 2 to 30 mol of ethylene oxide, polyglycerolated fatty amides comprising on average 1 to 5, such as from 1.5 to 4, glycerol groups; polyethoxylated fatty amines for example comprising from 2 to 30 mol of ethylene oxide; oxyethylenated fatty acid esters of sorbitan comprising from 2 to 30 mol of ethylene oxide; fatty acid esters of sucrose, fatty acid esters of polyethylene glycol, alkylpolyglycosides, N-alkylglucamine derivatives, amine oxides such as (C<sub>10</sub>-C<sub>14</sub>)alkylamine oxides and N-acylaminopropylmorpholine oxides. It will be noted that the alkylpolyglycosides are nonionic surfactants that can be suitable in the context of the present invention.

(iii) Amphoteric surfactant(s):

Representative amphoteric surfactants, whose nature is not a critical feature in the context of the present invention, can be chosen from aliphatic secondary and

tertiary amine derivatives in which the aliphatic radical is chosen from linear and branched chain radicals comprising 8 to 22 carbon atoms and comprising at least one water-soluble anionic group (chosen for example from carboxylate, sulfonate, sulfate, phosphate and phosphonate); mention may also be made of (C<sub>8</sub>-C<sub>20</sub>)alkylbetaines, sulfobetaines, (C<sub>8</sub>-C<sub>20</sub>)alkylamido(C<sub>1</sub>-C<sub>6</sub>)alkylbetaines and (C<sub>8</sub>-C<sub>20</sub>)alkylamido(C<sub>1</sub>-C<sub>6</sub>)alkylsulfobetaines.

Representative amine derivatives include the products sold under the name Miranol, as described in US patents 2,528,378 and 2,781,354, the disclosures of which are incorporated by reference herein, and having the structures:



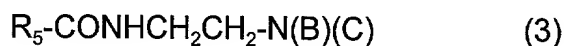
in which:

- R<sub>2</sub> is chosen from alkyl radicals derived from an acid R<sub>2</sub>-COOH present in hydrolysed coconut oil, heptyl, nonyl and undecyl radicals,

- R<sub>3</sub> is chosen from β-hydroxyethyl groups, and

- R<sub>4</sub> is chosen from carboxymethyl groups;

and



in which:

- (B) is -CH<sub>2</sub>CH<sub>2</sub>OX', with X' chosen from a -CH<sub>2</sub>CH<sub>2</sub>-COOH group and a hydrogen atom,

- (C) is -(CH<sub>2</sub>)<sub>z</sub>-Y', with z = 1 or 2, and with Y' chosen from -COOH and -CH<sub>2</sub>-CHOH-SO<sub>3</sub>H radicals,

-  $R_5$  is chosen from alkyl radicals, such as (a) alkyl radicals of an acid  $R_5\text{-COOH}$  present in oils chosen from coconut oil and hydrolysed linseed oil, (b) alkyl radicals, such as  $C_7$ ,  $C_9$ ,  $C_{11}$  and  $C_{13}$  alkyl radicals, and (c)  $C_{17}$  alkyl radicals and the iso forms, and unsaturated  $C_{17}$  radicals.

Such representative compounds are classified in the CTFA dictionary, 5th edition, 1993, under the names disodium cocoamphodiacetate, disodium lauroamphodiacetate, disodium caprylamphodiacetate, disodium capryloamphodiacetate, disodium cocoamphodipropionate, disodium lauroamphodipropionate, disodium caprylamphodipropionate, disodium capryloamphodipropionate, lauroamphodipropionic acid, and cocoamphodipropionic acid.

By way of example, mention may be made of the cocoamphodiacetate sold under the trade name Miranol C2M Concentrate by the company Rhône-Poulenc.

In the compositions in accordance with the invention, at least two surfactants of different types can be used. Representative compositions include compositions comprising (a) more than one anionic surfactant, (b) at least one anionic surfactant and at least one amphoteric surfactant, and (c) at least one anionic surfactant and at least one nonionic surfactant. In one embodiment, the composition can comprise at least one anionic surfactant and at least one amphoteric surfactant.

The at least one anionic surfactant used for example, can be chosen from ( $C_{12}$ - $C_{14}$ )alkyl sulfates of sodium, of triethanolamine and of ammonium; ( $C_{12}$ - $C_{14}$ )alkyl ether sulfates of sodium, of triethanolamine and of ammonium, oxyethylenated with 2.2 mol of ethylene oxide; sodium cocoyl isethionate; and sodium ( $C_{14}$ - $C_{16}$ )- $\alpha$ -olefin sulfonate, and used in combination with an amphoteric surfactant chosen from either:

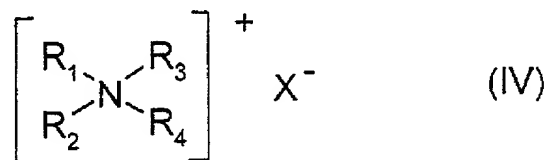
- amphoteric surfactants such as the amine derivatives known as disodium cocoamphodipropionate and sodium cocoamphopropionate, sold for example by the company Rhône-Poulenc under the trade name "Miranol C2M Conc®" as an aqueous solution comprising 38% active material, and under the name Miranol C32; or
- amphoteric surfactants of zwitterionic type, such as alkylbetaines, for example the cocobetaine sold under the name "Dehyton AB 30" as an aqueous solution comprising 32% AM by the company Henkel.

In one embodiment of the invention, the compositions can also comprise at least one cationic surfactant.

Representative at least one cationic surfactants can be chosen from salts of optionally polyoxyalkylenated primary, secondary and tertiary fatty amines; quaternary ammonium salts; imidazoline derivatives; and amine oxides of cationic nature.

The at least one cationic surfactants may, for example, be chosen from:

A) quaternary ammonium salts of formula (IV) below:



in which:

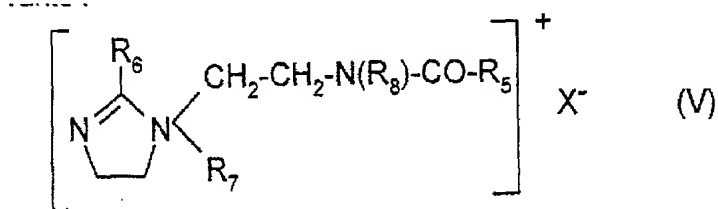
- the radicals  $R_1$ ,  $R_2$ ,  $R_3$ , and  $R_4$ , which may be identical or different, are independently chosen from linear and branched aliphatic radicals comprising from 1 to 30 carbon atoms, and aromatic radicals, such as

C<sub>6</sub>-C<sub>20</sub> aromatic radicals (for example, aryl and alkylaryl), wherein the aliphatic radicals can comprise hetero atoms such as, oxygen, nitrogen, sulfur and halogens, and wherein the aliphatic radicals are chosen, for example, from alkyl, alkoxy, polyoxy(C<sub>2</sub>-C<sub>6</sub>)alkylene, alkylamide, (C<sub>12</sub>-C<sub>22</sub>)alkylamido(C<sub>2</sub>-C<sub>6</sub>)alkyl, (C<sub>12</sub>-C<sub>22</sub>)alkylacetate and hydroxyalkyl radicals, comprising from 1 to 30 carbon atoms;

- X<sup>-</sup> is an anion chosen from halides, phosphates, anions derived from organic acids, (C<sub>2</sub>-C<sub>6</sub>)alkyl sulfates, alkyl sulfonates, and alkylaryl sulfonates.

The compounds of formula (IV) can be chosen from, for example, (a) compounds comprising at least two fatty aliphatic radicals comprising from 8 to 30 carbon atoms, (b) compounds comprising at least one fatty aliphatic radical comprising from 17 to 30 carbon atoms, and (c) compounds comprising at least one aromatic radical.

B) Quaternary ammonium salts of imidazolinium, such as, for example, the salts of formula (V) below:



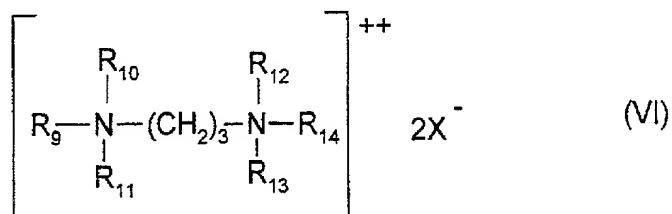
in which:

- R<sub>5</sub> is chosen from alkenyl and alkyl radicals comprising from 8 to 30 carbon atoms, for example radicals derived from tallow fatty acid,

- R<sub>6</sub> is chosen from a hydrogen atom, C<sub>1</sub>-C<sub>4</sub> alkyl radicals, and alkenyl and alkyl radicals comprising from 8 to 30 carbon atoms,
- R<sub>7</sub> is chosen from C<sub>1</sub>-C<sub>4</sub> alkyl radicals,
- R<sub>8</sub> is chosen from a hydrogen atom and C<sub>1</sub>-C<sub>4</sub> alkyl radicals,
- X<sup>-</sup> is an anion chosen from halides, phosphates, acetates, lactates, alkyl sulfates, alkyl sulfonates, and alkylaryl sulfonates.
- For example, R<sub>5</sub> and R<sub>6</sub>, which may be identical or different, are independently chosen from alkenyl and alkyl radicals comprising from 12 to 21 carbon atoms, for example, radicals derived from tallow fatty acid,
- R<sub>7</sub> is methyl, and
- R<sub>8</sub> is hydrogen.

Such products are, for example, (1) Quaternium-27 (International Cosmetic Ingredient Dictionary and Handbook, hereafter "CTFA", 1997), i.e., "Rewoquat" W75, W75PG, and W90, and (2) Quaternium-83 (CTFA 1997), i.e., "Rewoquat" W75HPG, which are sold by the company Witco.

C) Diquaternary ammonium salts of formula (VI):

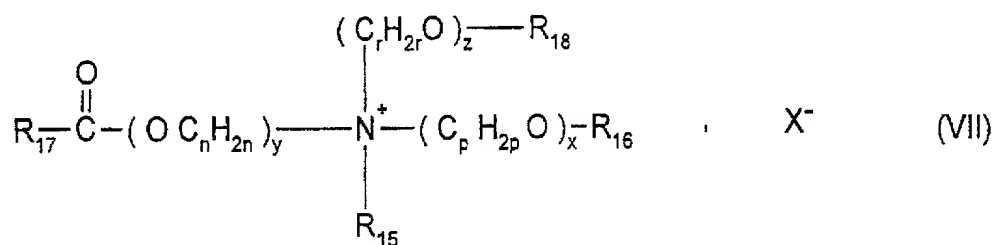


in which:

- $R_9$  is chosen from aliphatic radicals comprising from 16 to 30 carbon atoms,
- $R_{10}$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$  and  $R_{14}$ , which may be identical or different, are independently chosen from a hydrogen atom and alkyl radicals comprising from 1 to 4 carbon atoms, and
- $X^-$  is an anion chosen from halides, acetates, phosphates, nitrates and methyl sulfates.

For example, such diquaternary ammonium salts can comprise propane tallow diammonium dichloride.

D) Quaternary ammonium salts comprising at least one ester function. The quaternary ammonium salts comprising at least one ester function that can be used according to the invention are, for example, those of formula (VII) below:



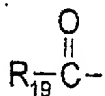


in which:

-  $R_{15}$  is chosen from  $C_1$ - $C_6$  alkyl radicals and  $C_1$ - $C_6$  hydroxyalkyl and  $C_1$ - $C_6$  dihydroxyalkyl radicals;

-  $R_{16}$  is chosen from:

- acyl groups of the following formula:



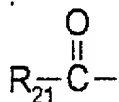
wherein  $R_{19}$  is defined below,

- linear and branched, saturated and unsaturated,  $C_1$ - $C_{22}$  hydrocarbon-based radicals, and

- a hydrogen atom;

-  $R_{18}$  is chosen from:

- acyl groups of the following formula:



wherein  $R_{21}$  is defined below,

- linear and branched, saturated and unsaturated,  $C_1$ - $C_6$  hydrocarbon-based radicals, and

- a hydrogen atom;

- $R_{17}$ ,  $R_{19}$  and  $R_{21}$ , which may be identical or different, are independently chosen from linear and branched, saturated and unsaturated,  $C_7$ - $C_{21}$  hydrocarbon-based radicals;
- $n$ ,  $p$  and  $r$ , which may be identical or different, are independently integers ranging from 2 to 6;
- $y$  is an integer ranging from 1 to 10;
- $x$  and  $z$ , which may be identical or different, are independently integers ranging from 0 to 10;

-  $X^-$  is chosen from simple and complex, organic and inorganic anions;

- provided that the sum  $x + y + z$  is from 1 to 15, and that when  $x$  is 0, then  $R_{16}$  is chosen from linear and branched, saturated and unsaturated,  $C_1$ - $C_{22}$  hydrocarbon-based radicals, and that when  $z$  is 0, then  $R_{18}$  is chosen from linear and branched, saturated and unsaturated,  $C_1$ - $C_6$  hydrocarbon-based radicals.

In one embodiment, the  $R_{15}$  alkyl radicals may be linear and branched and further, for example, linear.

For example,  $R_{15}$  may be chosen from methyl, ethyl, hydroxyethyl and dihydroxypropyl radicals and further for example from methyl and ethyl radicals.

The sum  $x + y + z$  may for example range from 1 to 10.

When  $R_{16}$  is chosen from linear and branched, saturated and unsaturated,  $C_1$ - $C_{22}$  hydrocarbon-based radicals,  $R_{16}$  may be long and comprise from 12 to 22 carbon atoms, or short and comprise from 1 to 3 carbon atoms.

When  $R_{18}$  is chosen from linear and branched, saturated and unsaturated,  $C_1$ - $C_6$  hydrocarbon-based radicals,  $R_{18}$  may for example comprise from 1 to 3 carbon atoms.

$R_{17}$ ,  $R_{19}$  and  $R_{21}$ , which may be identical or different, can, for example, be independently chosen from linear and branched, saturated and unsaturated  $C_{11}$ - $C_{21}$  hydrocarbon-based radicals, and for example from linear and branched, saturated and unsaturated,  $C_{11}$ - $C_{21}$  alkyl and alkenyl radicals.

5             $x$  and  $z$ , which may be identical or different, can for example independently be chosen from 0 or 1.

$y$  for example may be equal to 1.

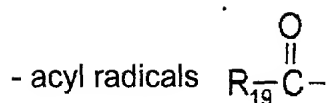
$n$ ,  $p$  and  $r$ , which may be identical or different, can for example be independently chosen from 2 and 3 and in one embodiment equal to 2.

10            The anion for example can be chosen from halides (chloride, bromide, and iodide) and alkyl sulfates, such as methyl sulfate. However, methanesulfonate, phosphate, nitrate, tosylate, anions derived from organic acids, such as acetate and lactate, and any other anions compatible with the ammonium comprising an ester function, may be used.

15            As a further example, the anion  $X^-$  can be chosen from chloride and methyl sulfate.

Further examples of ammonium salts of formula (VII) are those in which:

- $R_{15}$  is chosen from methyl and ethyl radicals,
- $x$  and  $y$  are equal to 1;
- $z$  is equal to 0 or 1;
- $n$ ,  $p$  and  $r$  are equal to 2;
- $R_{16}$  is chosen from:

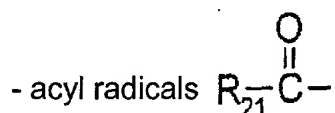


wherein  $R_{19}$  is defined below,

- methyl, ethyl and  $C_{14}$ - $C_{22}$  hydrocarbon-based radicals, and

- a hydrogen atom;

-  $R_{18}$  is chosen from:



- wherein  $R_{21}$  is defined below,

- a hydrogen atom;

-  $R_{17}$ ,  $R_{19}$  and  $R_{21}$ , which may be identical or different, are independently chosen from linear and branched, saturated and unsaturated,  $C_{13}$ - $C_{17}$  hydrocarbon-based radicals, such as from linear and branched, saturated and unsaturated  $C_{13}$ - $C_{17}$  alkyl and alkenyl radicals.

The hydrocarbon-based radicals can for example be linear.

Representative compounds of formula (VII) are chosen from diacyloxyethyl-dimethylammonium, diacyloxyethylhydroxyethylmethylammonium, monoacyloxyethyldihydroxyethylmethylammonium, triacyloxyethylmethylammonium and monoacyloxyethylhydroxyethyldimethylammonium salts (for example chloride and

methyl sulfate). The acyl radicals can for example comprise from 14 to 18 carbon atoms and can for example be obtained from plant oils, such as palm oil and sunflower oil. When the compound comprises several acyl radicals, these radicals, which may be independently chosen, may independently be identical or different.

5           These products are obtained, for example, by direct esterification of compounds chosen from triethanolamine, triisopropanolamine, alkyldiethanolamines and alkyldiisopropanolamines, which are optionally oxyalkylenated, with fatty acids or with fatty acid mixtures of plant or animal origin, and by transesterification of the methyl esters thereof. This esterification is followed by a quaternization using an alkylating agent such as alkyl halides (such as methyl and ethyl halides), dialkyl sulfates (for 10           example dimethyl and diethyl sulfates), methyl methanesulfonate, methyl para-toluenesulfonate, glycol chlorohydrin and glycerol chlorohydrin.

          Such compounds are sold, for example, under the names Dehyquat by the company Henkel, Stepanquat by the company Stepan, Noxamium by the company 15           Ceca and Rewoquat WE 18 by the company Rewo-Witco.

          It is also possible to use the ammonium salts comprising at least one ester function, described in patents US-A-4 874 554 and US-A-4 137 180, the disclosures of which are incorporated by reference herein.

          Representative quaternary ammonium salts of formula (IV) include 20           tetraalkylammonium chlorides such as, for example, dialkyldimethylammonium chlorides and alkyltrimethylammonium chlorides, in which the alkyl radical comprises from 12 to 22 carbon atoms, for example behenyltrimethylammonium chloride, distearyltrimethylammonium chloride, cetyltrimethylammonium chloride, and

benzyldimethylstearylammmonium chloride, and, stearamidopropyldimethyl(myristyl acetate)ammmonium chloride sold under the name "Cepharyl 70" by the company Van Dyk.

According to the invention, the at least one cationic surfactant can for example  
5 be present in an amount ranging from 0.1% to 20% by weight relative to the total weight of the final composition, such as from 0.1% to 10%, from 0.5% to 7%, and further such as from 1% to 5% by weight relative to the total weight of the final composition.

The composition of the invention can also comprise at least one additive chosen  
10 from thickeners, fragrances, nacreous agents, preserving agents, silicone sunscreens, non-silicone sunscreens, vitamins, provitamins, cationic, amphoteric, anionic and nonionic polymers, proteins, protein hydrolysates, 18-methyleicosanoic acid, hydroxy acids, panthenol, volatile and non-volatile, cyclic and linear and crosslinked, modified and non-modified silicones, and any other additive conventionally used in cosmetics which does not substantially adversely affect the properties of the compositions  
15 according to the invention.

Generally, these additives are present in the composition according to the  
invention in amounts, for example, ranging from 0 to 20% by weight relative to the total weight of the composition. The precise amount of each additive is readily determined by those skilled in the art depending on its nature and its function.

0 The compositions in accordance with the invention can also be used for washing or treating at least one keratin material chosen from hair, skin, eyelashes, eyebrows, nails, lips, scalp, and hair.

The compositions according to the invention can also be a detergent composition chosen from shampoos, shower gels, bubble baths and make-up-removing products. In this embodiment of the invention, the compositions comprise a washing base, which is generally aqueous.

5           At least one surfactant forms the washing base and can be chosen from anionic, amphoteric, nonionic and cationic surfactants, such as those defined above.

The quantity and quality of the washing base are sufficient to give the final composition at least one of the following qualities, satisfactory foaming power and satisfactory detergent power.

10           According to the invention, the washing base can be present for example in an amount ranging from 4% to 50% by weight, such as from 6% to 35% by weight and even further such as from 8% to 25% by weight, relative to the total weight of the final composition.

15           Another subject of the invention is also a process for treating at least one keratin material, such as the skin and the hair, comprising applying a cosmetic composition as defined above to the at least one keratin material and optionally rinsing it out with water.

Thus, this process according to the invention allows maintenance of the hairstyle and treatment of, care of, washing of or removal of make-up from the skin, the hair or any other keratin material.

20           The compositions of the invention can for example be in forms chosen from rinse-out conditioners and leave-in conditioners; permanent-waving, straightening, dyeing and bleaching compositions; rinse-out compositions to be applied before a procedure chosen from dyeing, bleaching, permanent-waving and straightening the

hair; rinse-out compositions to be applied after a procedure chosen from dyeing, bleaching, permanent-waving and straightening the hair; and rinse-out compositions to be applied between the two steps of a procedure chosen from permanent-waving and straightening the hair.

5           The compositions according to the invention can also be in a form chosen from aqueous and aqueous-alcoholic lotions for a care chosen from skin care and hair care.

10           The cosmetic compositions according to the invention can be in a form chosen from gels, milks, creams, emulsions, thickened lotions and mousses and can be used for treating at least one keratin material chosen from skin, nails, eyelashes, lips, and hair.

15           The compositions can be packaged in various forms chosen from vaporizers, pump-dispenser bottles and aerosol containers in order to ensure application of the composition in vaporized form or in the form of a mousse. Such packaging forms are indicated, for example, when it is desired to obtain a spray, a lacquer or a mousse for treating the hair.

          In all of the text hereinabove and hereinbelow, the percentages expressed are on a weight basis.

20           The invention will now be illustrated more fully with the aid of the examples which follow, which should not be considered as limiting it to the embodiments described. In the examples, AM means active material.

#### EXAMPLE 1

          A conditioner in accordance with the invention, having the following composition, was prepared:



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- Mixture of myristyl, cetyl and stearyl myristate, palmitate and stearate 0.5 g
- Behenyltrimethylammonium chloride (Genamin KDMP from Clariant) 1.2 gAM
- 5 - N-Oleyldihydrosphingosine 0.01 g
- Cationic emulsion containing 67% AM of a copolymer of polydimethylsiloxane containing  $\alpha,\omega$ -vinyl groups/polydimethylsiloxane containing  $\alpha,\omega$ -hydrogeno groups (DC-1997 from Dow Corning) 1.36 gAM
- 10 - Mixture of cetyl alcohol and of stearyl alcohol (50/50 by weight) 3 g
- Methylalkylalkylamidoethylimidazolinium methosulphate as a solution containing 75 % AM in propylene glycol (Rewoquat W 75 PG from Rewo) 0.05 gAM
- 15 - Lauryldimethicone copolyol containing 91% AM (Q2-5200 from Dow Corning) 0.23 gAM
- Fragrance, preserving agents qs
- Water qs 100 g

20 This composition is applied to washed and dried hair. It is left to stand on the hair for 2 minutes and is then rinsed off with water.

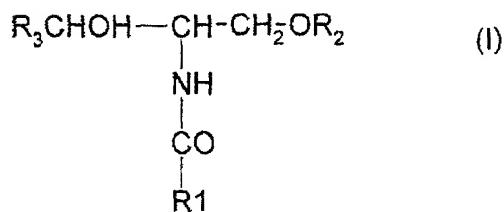
Hair treated with this conditioner is soft, smooth and disentangles easily.

WHAT IS CLAIMED IS:

1. A cosmetic composition comprising:

(1) at least one conditioner chosen from:

- synthetic oils;
- animal oils;
- plant oils;
- fluoro oils;
- perfluoro oils;
- natural waxes;
- synthetic waxes; and
- ceramides of formula (I) :



wherein:

- $R_1$  is chosen from linear and branched, saturated and unsaturated alkyl groups derived from at least one  $C_{14}$ - $C_{30}$  fatty acid, wherein said  $R_1$  is optionally substituted with at least one hydroxyl group in the  $\alpha$  position, and wherein said  $R_1$  may optionally be substituted with at least one hydroxyl group in the  $\omega$  position wherein said at least one hydroxyl group is esterified with at least one group chosen from saturated

and unsaturated C<sub>16</sub>-C<sub>30</sub> fatty acids;

- R<sub>2</sub> is chosen from a hydrogen atom, (glycosyl)<sub>n</sub> groups, (galactosyl)<sub>m</sub> groups and sulphogalactosyl groups, wherein n is an integer ranging from 1 to 4 and m is an integer ranging from 1 to 8;

5 - R<sub>3</sub> is chosen from C<sub>15</sub>-C<sub>26</sub> hydrocarbon-based groups, optionally saturated in the α position, wherein said R<sub>3</sub> is optionally substituted with at least one C<sub>1</sub>-C<sub>14</sub> alkyl group;

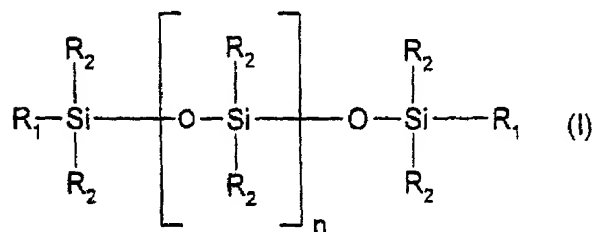
with the proviso that when said ceramides of formula (I) are chosen from natural

ceramides and natural glycosceramides, R<sub>3</sub> may also be chosen from C<sub>15</sub>-C<sub>26</sub> α-

10 hydroxyalkyl groups wherein the hydroxyl group is optionally esterified with at least one C<sub>16</sub>-C<sub>30</sub> α-hydroxy acid group; and

(2) at least one silicone copolymer with a dynamic viscosity ranging from 1 x 10<sup>6</sup> to 100 x 10<sup>6</sup> cP, resulting from the addition reaction, in the presence of a catalyst, of at least:

15 - (a) one polysiloxane of formula (I):



in which:

-  $R_1$ , which may be identical or different, are independently chosen from groups that can react by chain addition reaction,

-  $R_2$  in formula (I), which may be identical or different, are independently chosen from alkyl, alkenyl, cycloalkyl, aryl, hydroxyl, and alkylaryl groups, and can optionally further comprise functional groups,

-  $n$  is an integer wherein the polysiloxane of formula (I) has a kinematic viscosity ranging from 1 to  $1 \times 10^6$  mm<sup>2</sup>/s; and

- (b) at least one silicone compound comprising at least one and not more than two groups capable of reacting with the groups  $R_1$  of the polysiloxane (a), wherein:

- at least one of the compounds of type (a) and (b) comprises an aliphatic group comprising an ethylenic unsaturation.

2. A composition according to claim 1, wherein  $R_1$  is chosen from a hydrogen atom and aliphatic groups comprising an ethylenic unsaturation.

3. A composition according to claim 2, wherein the aliphatic groups comprising an ethylenic unsaturation are chosen from vinyl, allyl and hexenyl groups.

4. A composition according to claim 1, wherein the groups  $R_2$  are chosen from hydroxyl groups; alkyl groups comprising from 1 to 20 carbon atoms; cycloalkyl groups comprising from 5 to 6 carbon atoms; phenyl groups; alkylaryl groups comprising from 7 to 20 carbon atoms; and can optionally further comprise functional groups chosen from ethers, amines, carboxyls, hydroxyls, thiols, esters, sulfonates and sulfates.

5. A composition according to claim 1, wherein said alkenyl groups are chosen from alkenyl groups comprising from 2 to 10 carbon atoms.

6. A composition according to claim 1, wherein  $R_2$  is a methyl group.

7. A composition according to claim 1, wherein n is an integer ranging from 5 to 5,000.

8. A composition according to claim 1, wherein the compound of type (b) is another polysiloxane of type (a) in which at least one and not more than two groups  $R_1$  of the polysiloxane (b) can react with the groups  $R_1$  of the polysiloxane (a).

9. A composition according to claim 1, wherein, in the presence of a hydrosilylation catalyst, the at least one silicone copolymer is obtained by addition reaction of at least:

- (a) one  $\alpha,\omega$ -divinylpolydimethylsiloxane, and
- (b) one  $\alpha,\omega$ -dihydrogenopolydimethylsiloxane.

10. A composition according to claim 9, wherein the hydrosilylation catalyst is a platinum catalyst.

11. A composition according to claim 1, wherein said at least one silicone copolymer is in the form of an aqueous emulsion.

12. A composition according to claim 1, wherein the at least one silicone copolymer is essentially non-crosslinked.

13. A composition according to claim 1, wherein the at least one silicone copolymer is present in an amount ranging from 0.05% to 10% by weight relative to the total weight of the composition.

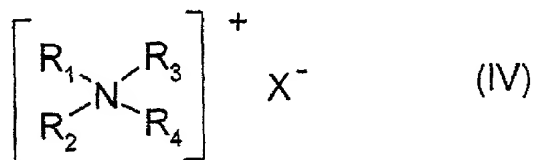
14. A composition according to claim 13, wherein the at least one silicone copolymer is present in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

15. A composition according to claim 11, wherein said aqueous emulsion of the at least one silicone copolymer has a silicone droplet or particle size ranging from 10 nm to 50  $\mu\text{m}$ .

16. A composition according to claim 15, wherein said emulsion of the at least one silicone copolymer has a silicone droplet or particle size ranging from 0.3  $\mu\text{m}$  to 20  $\mu\text{m}$ .

17. A composition according to claim 1 further comprising at least one cationic surfactant chosen from:

A) quaternary ammonium salts of formula (IV) below:

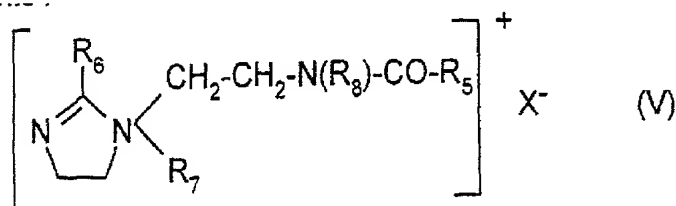


in which:

- the radicals  $R_1$ ,  $R_2$ ,  $R_3$ , and  $R_4$ , which may be identical or different, are independently chosen from linear and branched aliphatic radicals comprising from 1 to 30 carbon atoms, and aromatic radicals, wherein the aliphatic radicals optionally comprise hetero atoms, and

-  $X^-$  is an anion chosen from the group of halides, phosphates, anions derived from organic acids,  $(C_2-C_6)$ alkyl sulfates, alkyl sulfonates, and alkylaryl sulfonates;

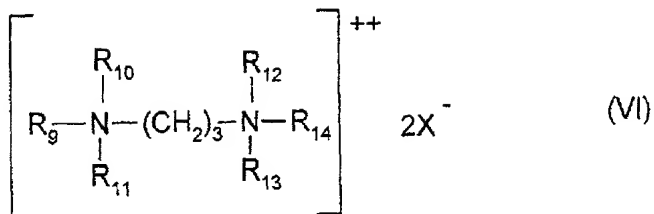
B) quaternary ammonium salts of imidazolinium of formula (V) below:



in which:

- $R_5$  is chosen from alkenyl and alkyl radicals comprising from 8 to 30 carbon atoms,
- $R_6$  is chosen from a hydrogen atom,  $C_1-C_4$  alkyl radicals, and alkenyl and alkyl radicals comprising from 8 to 30 carbon atoms,
- $R_7$  is chosen from  $C_1-C_4$  alkyl radicals,
- $R_8$  is chosen from a hydrogen atom and  $C_1-C_4$  alkyl radicals, and
- $X^-$  is an anion chosen from halides, phosphates, acetates, lactates, alkyl sulfates, alkyl sulfonates, and alkylaryl sulfonates;

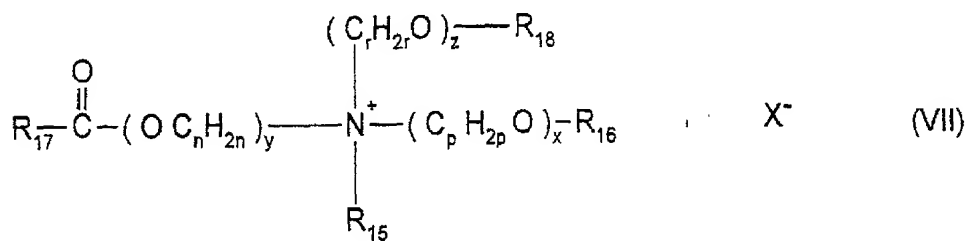
C) diquaternary ammonium salts of formula (VI):



in which:

- $R_9$  is chosen from aliphatic radicals comprising from 16 to 30 carbon atoms,
- $R_{10}$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$  and  $R_{14}$ , which may be identical or different, are independently chosen from a hydrogen atom and alkyl radicals comprising from 1 to 4 carbon atoms, and
- $X^-$  is an anion chosen from halides, acetates, phosphates, nitrates and methyl sulfates;

D) quaternary ammonium salts of formula (VII) below comprising at least one ester function:



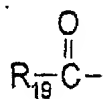


in which:

-  $R_{15}$  is chosen from  $C_1$ - $C_6$  alkyl radicals and  $C_1$ - $C_6$  hydroxyalkyl and  $C_1$ - $C_6$  dihydroxyalkyl radicals;

-  $R_{16}$  is chosen from:

- acyl groups of the following formula:



wherein  $R_{19}$  is defined below,

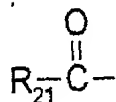
- linear and branched, saturated and unsaturated,  $C_1$ - $C_{22}$

hydrocarbon-based radicals, and

- a hydrogen atom;

-  $R_{18}$  is chosen from:

- acyl groups of the following formula:



wherein  $R_{21}$  is defined below,

- linear and branched, saturated and unsaturated,  $C_1$ - $C_6$

hydrocarbon-based radicals, and

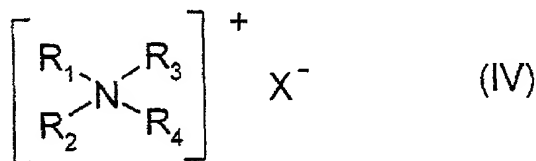
- a hydrogen atom;

- $R_{17}$ ,  $R_{19}$  and  $R_{21}$ , which may be identical or different, are independently chosen from linear and branched, saturated and unsaturated,  $C_7-C_{21}$  hydrocarbon-based radicals;
  - $n$ ,  $p$  and  $r$ , which may be identical or different, are independently integers ranging from 2 to 6;
  - $y$  is an integer ranging from 1 to 10;
  - $x$  and  $z$ , which may be identical or different, are independently integers ranging from 0 to 10; and
  - $X^-$  is chosen from simple and complex, organic and inorganic anions;
- and

- provided that the sum  $x + y + z$  is from 1 to 15, and that when  $x$  is 0, then  $R_{16}$  is chosen from linear and branched, saturated and unsaturated,  $C_1-C_{22}$  hydrocarbon-based radicals, and that when  $z$  is 0, then  $R_{18}$  is chosen from linear and branched, saturated and unsaturated,  $C_1-C_6$  hydrocarbon-based radicals.

18. A composition according to claim 17, wherein said at least one cationic surfactant is chosen from:

A) quaternary ammonium salts of formula (IV) below:



wherein:

-  $X^-$  is an anion chosen from halides,  $(C_2-C_6)$ alkyl sulfates, phosphates, alkyl and alkylaryl sulfonates, and anions derived from organic acids, and

i) - the radicals  $R_1$ ,  $R_2$ , and  $R_3$ , which may be identical or different, are independently chosen from linear and branched aliphatic radicals comprising from 1 to 4 carbon atoms, optionally comprising hetero atoms, and aromatic radicals, and

-  $R_4$  is chosen from linear and branched alkyl radicals comprising from 16 to 30 carbon atoms;

ii) - the radicals  $R_1$  and  $R_2$ , which may be identical or different, are independently chosen from linear and branched aliphatic radicals comprising from 1 to 4 carbon atoms, optionally comprising hetero atoms, and aromatic radicals, and

-  $R_3$  and  $R_4$ , which may be identical or different, are independently chosen from linear and branched alkyl radicals comprising from 12 to 30 carbon atoms, wherein said radicals further comprise at least one function chosen from ester and amide functions.

19. A composition according to claim 17, wherein in said quaternary ammonium salts of formula (VII):

-  $R_{15}$  is chosen from methyl and ethyl radicals,

- x and y are equal to 1;

- z is equal to 0 or 1;

- n, p and r are equal to 2;

-  $R_{16}$  is chosen from:



wherein R<sub>19</sub> is defined below,

- methyl, ethyl and C<sub>14</sub>-C<sub>22</sub> hydrocarbon-based radicals, and

- a hydrogen atom;

- R<sub>18</sub> is chosen from:

- acyl radicals 
$$\text{R}_{21}-\overset{\text{O}}{\parallel}{\text{C}}-$$

- wherein R<sub>21</sub> is defined below,

- a hydrogen atom; and

- R<sub>17</sub>, R<sub>19</sub> and R<sub>21</sub>, which may be identical or different, are independently chosen from linear and branched, saturated and unsaturated, C<sub>13</sub>-C<sub>17</sub> hydrocarbon-based radicals.

20. A composition according to claim 19, wherein R<sub>17</sub>, R<sub>19</sub> and R<sub>21</sub> are chosen from linear and branched, saturated and unsaturated C<sub>13</sub>-C<sub>17</sub> aliphatic radicals.

21. A composition according to claim 19, wherein the hydrocarbon-based radicals are chosen from linear hydrocarbon-based radicals.

22. A composition according to claim 17, wherein the compounds of formula (VII) are chosen from diacyloxyethyldimethylammonium, diacyloxyethylhydroxyethylmethylammonium, monoacyloxyethyldihydroxyethylmethylammonium, triacyloxyethylmethylammonium and monoacyloxyethylhydroxyethyldimethylammonium salts.

23. A composition according to claim 22, wherein said monoacyloxyethylhydroxyethyldimethylammonium salts are chosen from monoacyloxyethyl-

hydroxyethyldimethylammonium chloride salts and monoacyloxyethyl-  
hydroxyethyldimethylammonium methyl sulfate salts.

24. A composition according to claim 19, wherein when  $R_{16}$  and  $R_{18}$  are  
chosen from acyl radicals, said acyl radicals are obtained from plant oils chosen from  
palm oil and sunflower oil.

25. A composition according to claim 17, wherein  $X^-$  of said quaternary  
ammonium salts of formula (IV) is an anion chosen from chloride, bromide, iodide,  
methyl sulfate, acetate, and lactate.

26. A composition according to claim 17, wherein said aromatic radicals of  
said quaternary ammonium salts of formula (IV) are chosen from aryl and alkylaryl.

27. A composition according to claim 17, wherein said hetero atoms of said  
quaternary ammonium salts of formula (IV) are chosen from oxygen, nitrogen, sulfur  
and halogens.

28. A composition according to claim 18, wherein said aliphatic radicals of  
formula (IV)(ii) are chosen from alkyl, alkoxy, alkylamide, polyoxy( $C_2-C_6$ )alkylene, and  
hydroxyalkyl radicals comprising from 1 to 4 carbon atoms.

29. A composition according to claim 18, wherein said  $R_3$  and  $R_4$  of formula  
(IV)(ii) are chosen from ( $C_{12}-C_{22}$ )alkylamido( $C_2-C_6$ )alkyl and ( $C_{12}-C_{22}$ )alkylacetate  
radicals.

30. A composition according to claim 17, wherein said  $R_5$  of formula (V) is  
chosen from radicals derived from tallow fatty acid.

31. A composition according to claim 17, wherein in said quaternary  
ammonium salts of imidazolinium of formula (V):

- R<sub>5</sub> and R<sub>6</sub>, which may be identical or different, are independently chosen from alkenyl and alkyl radicals comprising from 12 to 21 carbon atoms,
- R<sub>7</sub> is methyl, and
- R<sub>8</sub> is hydrogen.

5            32.    A composition according to claim 31, wherein said R<sub>5</sub> and R<sub>6</sub>, which may be identical or different, are independently chosen from radicals derived from tallow fatty acid.

            33.    A composition according to claim 17, wherein said diquatery ammonium salts comprise propane tallow diammonium dichloride.

10           34.    A composition according to claim 17, wherein said R<sub>15</sub> alkyl radicals of said quaternary ammonium salts of formula (VII) are chosen from linear and branched C<sub>1</sub>-C<sub>6</sub> alkyl radicals.

            35.    A composition according to claim 34, wherein said R<sub>15</sub> radicals are linear radicals.

15           36.    A composition according to claim 35, wherein said R<sub>15</sub> radicals are chosen from methyl, ethyl, hydroxyethyl and dihydroxypropyl.

            37.    A composition according to claim 36, wherein said R<sub>15</sub> radicals are chosen from methyl and ethyl.

20           38.    A composition according to claim 17, wherein said sum of x + y + z of said quaternary ammonium salts of formula (VII) ranges from 1-10.

            39.    A composition according to claim 17, wherein said quaternary ammonium salts of formula (IV) are chosen from (a) compounds comprising at least two fatty aliphatic radicals comprising from 8 to 30 carbon atoms, (b) compounds comprising at

least one fatty aliphatic radical comprising from 17 to 30 carbon atoms, and (c) compounds comprising at least one aromatic radical.

40. A composition according to claim 17, wherein said at least one cationic surfactant is chosen from behenyltrimethylammonium salts, stearamidopropyldimethyl(myristyl acetate)ammonium salts, Quaternium-27 and Quaternium-83.

41. A composition according to claim 17, wherein the at least one cationic surfactant is present in an amount ranging from 0.1% to 10% by weight relative to the total weight of the composition.

42. A composition according to claim 41, wherein the at least one cationic surfactant is present in an amount ranging from 0.5% to 7% by weight relative to the total weight of the composition.

43. A composition according to claim 42, wherein the at least one cationic surfactant is present in an amount ranging from 1% to 5% by weight relative to the total weight of the composition.

44. A composition according to claim 1 further comprising at least one surfactant chosen from anionic, nonionic, and amphoteric surfactants.

45. A composition according to claim 44, wherein the at least one surfactant chosen from anionic, nonionic, and amphoteric surfactants is present in an amount ranging from 0.1% to 60% by weight, relative to the total weight of the composition.

46. A composition according to claim 45, wherein the at least one surfactant chosen from anionic, nonionic, and amphoteric surfactants is present in an amount ranging from 3% to 40% by weight, relative to the total weight of the composition.

47. A composition according to claim 46, wherein the at least one surfactant chosen from anionic, nonionic, and amphoteric surfactants is present in an amount ranging from 5% to 30% by weight, relative to the total weight of the composition.

48. A composition according to claim 44, wherein the at least one surfactant chosen from anionic, nonionic, and amphoteric surfactants comprises at least one anionic surfactant salt chosen from alkyl sulfates, alkyl ether sulfates, alkylamidoether sulfates, alkylaryl polyether sulfates, monoglyceride sulfates; alkyl sulfonates, alkyl phosphates, alkylamide sulfonates, alkylaryl sulfonates,  $\alpha$ -olefin sulfonates, paraffin sulfonates; alkyl sulfosuccinates, alkyl ether sulfosuccinates, alkylamide sulfosuccinates; alkyl sulfosuccinamates; alkyl sulfoacetates; alkyl ether phosphates; acyl sarcosinates; acyl isethionates and N-acyltaurates.

49. A composition according to claim 44, wherein said at least one surfactant is chosen from anionic surfactants chosen from alkaline salts, sodium salts, ammonium salts, amine salts, amino alcohol salts and magnesium salts.

50. A composition according to claim 48, wherein said alkyl and acyl portions of radicals of said salts comprise 1 and from 8 to 24 carbon atoms, and said aryl portions of radicals of said salts are phenyl.

51. A composition according to claim 44, wherein said at least one surfactant is chosen from anionic surfactants chosen from fatty acid salts, acyl lactates wherein the acyl radical comprises 8 to 20 carbon atoms, and weakly anionic surfactants.

52. A composition according to claim 51, wherein said fatty acid salts are chosen from the salts of oleic acid, ricinoleic acid, palmitic acid, stearic acid, coconut oil acid and hydrogenated coconut oil acid.



53. A composition according to claim 44, wherein said at least one surfactant is chosen from anionic surfactants chosen from alkyl-D-galactosiduronic acids and their salts, polyoxyalkylenated (C<sub>6</sub>-C<sub>24</sub>) alkyl ether carboxylic acids and their salts, polyoxyalkylenated (C<sub>6</sub>-C<sub>24</sub>) alkylaryl ether carboxylic acids and their salts, and polyoxyalkylenated (C<sub>6</sub>-C<sub>24</sub>) alkylamido ether carboxylic acids and their salts.

54. A composition according to claim 51, wherein said weakly anionic surfactants comprise from 2 to 50 ethylene oxide groups.

55. A composition according to claim 48, wherein said at least one anionic surfactant salt is chosen from alkyl sulfates and alkyl ether sulfates.

56. A composition according to claim 44, wherein said at least one surfactant is chosen from nonionic surfactants chosen from polyethoxylated, polypropoxylated and polyglycerolated fatty acids, alkylphenols,  $\alpha$ -diols and alcohols having a fatty aliphatic chain comprising 8 to 18 carbon atoms, wherein the number of ethylene oxide and propylene oxide groups ranges from 2 to 50 and the number of glycerol groups ranges from 2 to 30, copolymers of ethylene oxide and of propylene oxide, condensates of ethylene oxide and of propylene oxide with fatty alcohols, polyethoxylated fatty amides comprising from 2 to 30 mol of ethylene oxide, polyglycerolated fatty amides comprising on average 1 to 5 glycerol groups, polyethoxylated fatty amines comprising from 2 to 30 mol of ethylene oxide, oxyethylenated fatty acid esters of sorbitan comprising from 2 to 30 mol of ethylene oxide, fatty acid esters of sucrose, fatty acid esters of polyethylene glycol, alkylpolyglycosides, N-alkylglucamine derivatives, and amine oxides.

57. A composition according to claim 56, wherein said polyglycerolated fatty amides comprise on average 1.5 to 4 glycerol groups.

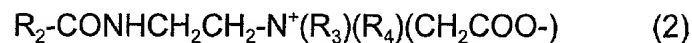
58. A composition according to claim 56, wherein said amine oxides are chosen from (C<sub>10</sub>-C<sub>14</sub>)alkylamine oxides and N-acylaminopropylmorpholine oxides.

59. A composition according to claim 56, wherein said nonionic surfactants are chosen from alkylpolyglycosides.

5 60. A composition according to claim 44, wherein said at least one surfactant is chosen from amphoteric surfactants chosen from aliphatic secondary and tertiary amine derivatives wherein the aliphatic radical is chosen from linear and branched chain radicals comprising 8 to 22 carbon atoms and comprising at least one water-soluble anionic group, (C<sub>8</sub>-C<sub>20</sub>)alkylbetaines, sulfobetaines, 10 (C<sub>8</sub>-C<sub>20</sub>)alkylamido(C<sub>1</sub>-C<sub>6</sub>)alkylbetaines, and (C<sub>8</sub>-C<sub>20</sub>)alkylamido(C<sub>1</sub>-C<sub>6</sub>)alkylsulfobetaines.

61. A composition according to claim 60, wherein said at least one water-soluble anionic group is chosen from carboxylates, sulfonates, sulfates, phosphates and phosphonates.

15 62. A composition according to claim 60, wherein said amine derivatives are chosen from the compounds:



in which:

- 20 - R<sub>2</sub> is chosen from alkyl radicals derived from an acid R<sub>2</sub>-COOH present in hydrolysed coconut oil, heptyl, nonyl and undecyl radicals,
- R<sub>3</sub> is chosen from β-hydroxyethyl groups, and
- R<sub>4</sub> is chosen from carboxymethyl groups;

and



in which:

- (B) is  $\text{-CH}_2\text{CH}_2\text{OX}'$ , with  $X'$  chosen from a  $\text{-CH}_2\text{CH}_2\text{-COOH}$  group and a

hydrogen atom,

- (C) is  $\text{-(CH}_2\text{)}_z\text{-Y}'$ , with  $z = 1$  or  $2$ , and with  $Y'$  chosen from  $\text{-COOH}$  and  $\text{-CH}_2\text{-}$

$\text{CHOH-SO}_3\text{H}$  radicals,

-  $R_5$  is chosen from alkyl radicals and unsaturated  $C_{17}$  radicals.

63. A composition according to claim 62, wherein said alkyl radicals  $R_5$  are chosen from (a) alkyl radicals of an acid  $R_5\text{-COOH}$  present in oils chosen from coconut oil and hydrolysed linseed oil, and (b)  $C_{17}$  alkyl radicals and the iso forms.

64. A composition according to claim 62, wherein said alkyl radicals of said  $R_5$  are chosen from alkyl radicals chosen from  $C_7$ ,  $C_9$ ,  $C_{11}$  and  $C_{13}$  alkyl radicals.

65. A composition according to claim 44, wherein said at least one surfactant is chosen from at least two surfactants of different types.

66. A composition according to claim 65, wherein said at least two surfactants of different types are chosen from (a) more than one anionic surfactant, (b) at least one anionic surfactant and at least one amphoteric surfactant, and (c) at least one anionic surfactant and at least one nonionic surfactant.

67. A composition according to claim 44, wherein said at least one surfactant is chosen from anionic surfactants chosen from  $(C_{12}\text{-}C_{14})$ alkyl sulfates of sodium, of triethanolamine and of ammonium,  $(C_{12}\text{-}C_{14})$ alkyl ether sulfates of sodium, of triethanolamine and of ammonium, oxyethylenated with 2.2 mol of ethylene oxide,

sodium cocoyl isethionate, and sodium (C<sub>14</sub>-C<sub>16</sub>)- $\alpha$ -olefin sulfonate, and from an amphoteric surfactant chosen from either:

- amine derivatives comprising disodium cocoamphodipropionate and sodium cocoamphopropionate, or
- 5 - amphoteric surfactants of zwitterionic type.

68. A composition according to claim 67, wherein said amphoteric surfactants of zwitterionic type are chosen from alkylbetaines.

69. A composition according to claim 68, wherein said alkylbetaines are chosen from cocobetaine.

10 70. A composition according to claim 1 further comprising at least one additive chosen from fragrances, nacreous agents, preserving agents, silicone sunscreens, non-silicone sunscreens, vitamins, provitamins, amphoteric, anionic and nonionic polymers, proteins, protein hydrolysates, 18-methyleicosanoic acid, hydroxy acids, panthenol, volatile and non-volatile, cyclic and linear and crosslinked, modified  
15 and non-modified silicones, and any other additive conventionally used in cosmetics which does not substantially adversely affect the properties of the compositions according to the invention.

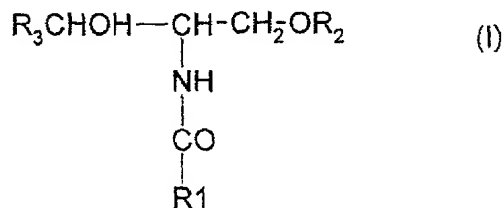
20 71. A composition according to claim 70, wherein said at least one additive is present in an amount ranging from 0 to 20% by weight relative to the total weight of the composition.

72. A rinse-out conditioner, a leave-in conditioner, a composition for permanent-waving the hair, a composition for straightening the hair, a composition for dyeing the hair, a composition for bleaching the hair, a rinse-out composition to be

applied before a procedure chosen from dyeing, bleaching, permanent-waving and  
 straightening the hair, a rinse-out composition to be applied after a procedure chosen  
 from dyeing, bleaching, permanent-waving and straightening the hair, a rinse-out  
 composition to be applied between the two steps of a permanent-waving operation, a  
 5 rinse-out composition to be applied between the two steps of a hair-straightening  
 operation, a washing composition for the body, an aqueous lotion, an aqueous-  
 alcoholic lotion, a gel, a milk, a cream, an emulsion, a thickened lotion, a mousse, or a  
 detergent composition comprising a washing base comprising:

(1) at least one conditioner chosen from:

- synthetic oils;
- animal oils;
- plant oils;
- fluoro oils;
- perfluoro oils;
- 15 - natural waxes;
- synthetic waxes; and
- ceramides of formula (I) :



wherein:

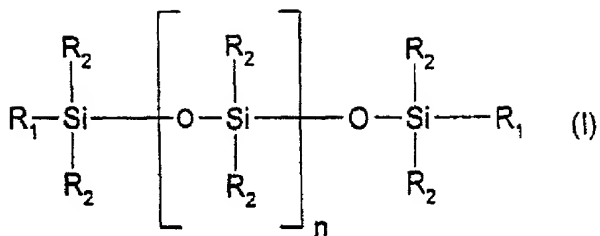
-  $R_1$  is chosen from linear and branched, saturated and unsaturated alkyl groups derived from at least one  $C_{14}$ - $C_{30}$  fatty acid, wherein said  $R_1$  is optionally substituted with at least one hydroxyl group in the  $\alpha$  position, and wherein said  $R_1$  may optionally be substituted with at least one hydroxyl group in the  $\omega$  position wherein said at least one hydroxyl group is esterified with at least one group chosen from saturated and unsaturated  $C_{16}$ - $C_{30}$  fatty acids;

-  $R_2$  is chosen from a hydrogen atom, (glycosyl) $_n$  groups, (galactosyl) $_m$  groups and sulphogalactosyl groups, wherein  $n$  is an integer ranging from 1 to 4 and  $m$  is an integer ranging from 1 to 8;

-  $R_3$  is chosen from  $C_{15}$ - $C_{26}$  hydrocarbon-based groups, optionally saturated in the  $\alpha$  position, wherein said  $R_3$  is optionally substituted with at least one  $C_1$ - $C_{14}$  alkyl group; with the proviso that when said ceramides of formula (I) are chosen from natural ceramides and natural glycosceramides,  $R_3$  may also be chosen from  $C_{15}$ - $C_{26}$   $\alpha$ -hydroxyalkyl groups wherein the hydroxyl group is optionally esterified with at least one  $C_{16}$ - $C_{30}$   $\alpha$ -hydroxy acid group; and

(2) at least one silicone copolymer with a dynamic viscosity ranging from  $1 \times 10^6$  to  $100 \times 10^6$  cP, resulting from the addition reaction, in the presence of a catalyst, of at least:

- (a) one polysiloxane of formula (I):



in which:

-  $\text{R}_1$ , which may be identical or different, are independently chosen from groups that can react by chain addition reaction,

-  $\text{R}_2$  in formula (I), which may be identical or different, are independently chosen from alkyl, alkenyl, cycloalkyl, aryl, hydroxyl, and alkylaryl groups, and can optionally further comprise functional groups,

-  $n$  is an integer wherein the polysiloxane of formula (I) has a kinematic viscosity ranging from 1 to  $1 \times 10^6 \text{ mm}^2/\text{s}$ ; and

- (b) at least one silicone compound comprising at least one and not more than two groups capable of reacting with the groups  $\text{R}_1$  of the polysiloxane (a), wherein:

- at least one of the compounds of type (a) and (b) comprises an aliphatic group comprising an ethylenic unsaturation.

73. An aqueous or aqueous-alcoholic lotion according to claim 72, said lotion being suitable for skin care or for hair care.

74. A gel, a milk, a cream, an emulsion, a thickened lotion or a mousse according to claim 72, wherein said gel, milk, cream, emulsion, thickened lotion or mousse is suitable to be applied to at least one keratin material chosen from skin, nails, eyelashes, lips and hair.

5 75. A detergent composition comprising a washing base according to claim 72, wherein said composition is chosen from shampoos, shower gels, bubble baths and make-up-removing products.

10 76. A detergent composition comprising a washing base according to claim 72, wherein said washing base comprises at least one surfactant chosen from anionic, amphoteric, nonionic and cationic surfactants.

77. A detergent composition according to claim 76, wherein said at least one surfactant is present in an amount effective to provide satisfactory foaming power and satisfactory detergent power.

15 78. A detergent composition comprising a washing base according to claim 76, wherein said washing base is present in an amount ranging from 4% to 50% by weight, relative to the total weight of the final composition.

79. A detergent composition comprising a washing base according to claim 78, wherein said washing base is present in an amount ranging from 6% to 35% by weight, relative to the total weight of the final composition.

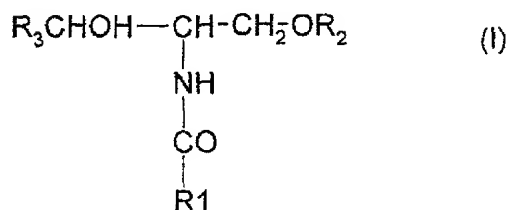
20 80. A detergent composition comprising a washing base according to claim 79, wherein said washing base is present in an amount ranging from 8% to 25% by weight, relative to the total weight of the final composition.



81. A process of washing or caring for a keratin material comprising applying to said keratin material a composition comprising:

(1) at least one conditioner chosen from:

- synthetic oils;
- animal oils;
- plant oils;
- fluoro oils;
- perfluoro oils;
- natural waxes;
- synthetic waxes; and
- ceramides of formula (I) :



wherein:

- $R_1$  is chosen from linear and branched, saturated and unsaturated alkyl groups derived from at least one  $C_{14}$ - $C_{30}$  fatty acid, wherein said  $R_1$  is optionally substituted with at least one hydroxyl group in the  $\alpha$  position, and wherein said  $R_1$  may optionally be substituted with at least one hydroxyl group in the  $\omega$  position wherein said at least one hydroxyl group is esterified with at least one group chosen from saturated

and unsaturated C<sub>16</sub>-C<sub>30</sub> fatty acids;

- R<sub>2</sub> is chosen from a hydrogen atom, (glycosyl)<sub>n</sub> groups, (galactosyl)<sub>m</sub> groups and sulphogalactosyl groups, wherein n is an integer ranging from 1 to 4 and m is an integer ranging from 1 to 8;

- R<sub>3</sub> is chosen from C<sub>15</sub>-C<sub>26</sub> hydrocarbon-based groups, optionally saturated in the α position, wherein said R<sub>3</sub> is optionally substituted with at least one C<sub>1</sub>-C<sub>14</sub> alkyl group;

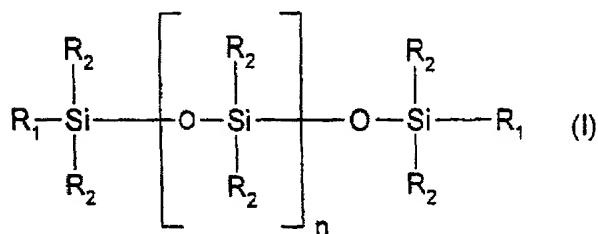
with the proviso that when said ceramides of formula (I) are chosen from natural

ceramides and natural glycoceramides, R<sub>3</sub> may also be chosen from C<sub>15</sub>-C<sub>26</sub> α-

hydroxyalkyl groups wherein the hydroxyl group is optionally esterified with at least one C<sub>16</sub>-C<sub>30</sub> α-hydroxy acid group; and

(2) at least one silicone copolymer with a dynamic viscosity ranging from 1 x 10<sup>6</sup> to 100 x 10<sup>6</sup> cP, resulting from the addition reaction, in the presence of a catalyst, of at least:

- (a) one polysiloxane of formula (I):



in which:

-  $R_1$ , which may be identical or different, are independently chosen from groups that can react by chain addition reaction,

-  $R_2$  in formula (I), which may be identical or different, are independently chosen from alkyl, alkenyl, cycloalkyl, aryl, hydroxyl, and alkylaryl groups, and can optionally further comprise functional groups,

-  $n$  is an integer wherein the polysiloxane of formula (I) has a kinematic viscosity ranging from 1 to  $1 \times 10^6$  mm<sup>2</sup>/s; and

- (b) at least one silicone compound comprising at least one and not more than two groups capable of reacting with the groups  $R_1$  of the polysiloxane (a), wherein:

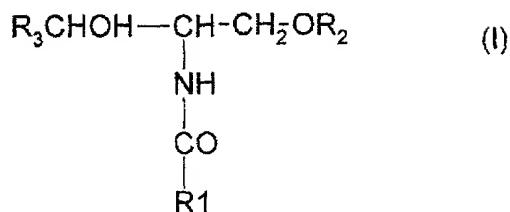
- at least one of the compounds of type (a) and (b) comprises an aliphatic group comprising an ethylenic unsaturation.

82. A process for treating a keratin material comprising applying to said keratin material a composition comprising:

(1) at least one conditioner chosen from:

- synthetic oils;
- animal oils;
- plant oils;
- fluoro oils;
- perfluoro oils;
- natural waxes;
- synthetic waxes; and

- ceramides of formula (I) :



wherein:

-  $\text{R}_1$  is chosen from linear and branched, saturated and unsaturated alkyl groups derived from at least one  $\text{C}_{14}$ - $\text{C}_{30}$  fatty acid, wherein said  $\text{R}_1$  is optionally substituted with at least one hydroxyl group in the  $\alpha$  position, and wherein said  $\text{R}_1$  may optionally be substituted with at least one hydroxyl group in the  $\omega$  position wherein said at least one hydroxyl group is esterified with at least one group chosen from saturated and unsaturated  $\text{C}_{16}$ - $\text{C}_{30}$  fatty acids;

-  $\text{R}_2$  is chosen from a hydrogen atom, (glycosyl) $_n$  groups, (galactosyl) $_m$  groups and sulphogalactosyl groups, wherein  $n$  is an integer ranging from 1 to 4 and  $m$  is an integer ranging from 1 to 8;

-  $\text{R}_3$  is chosen from  $\text{C}_{15}$ - $\text{C}_{26}$  hydrocarbon-based groups, optionally saturated in the  $\alpha$  position, wherein said  $\text{R}_3$  is optionally substituted with at least one  $\text{C}_1$ - $\text{C}_{14}$  alkyl group;

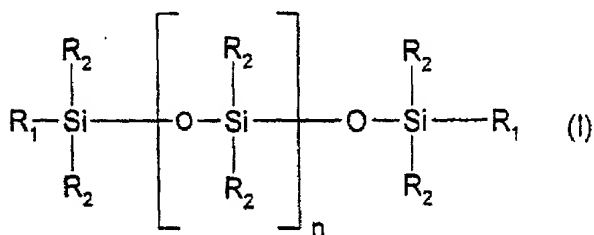
with the proviso that when said ceramides of formula (I) are chosen from natural ceramides and natural glycosceramides,  $\text{R}_3$  may also be chosen from  $\text{C}_{15}$ - $\text{C}_{26}$   $\alpha$ -

hydroxyalkyl groups wherein the hydroxyl group is optionally esterified with at least one C<sub>16</sub>-C<sub>30</sub> α-hydroxy acid group; and

(2) at least one silicone copolymer with a dynamic viscosity ranging from 1 x 10<sup>6</sup> to 100 x 10<sup>6</sup> cP, resulting from the addition reaction, in the presence of a catalyst, of at

least:

- (a) one polysiloxane of formula (I):



in which:

- R<sub>1</sub>, which may be identical or different, are independently chosen from groups that can react by chain addition reaction,

- R<sub>2</sub> in formula (I), which may be identical or different, are independently chosen from alkyl, alkenyl, cycloalkyl, aryl, hydroxyl, and alkylaryl groups, and can optionally further comprise functional groups,

- n is an integer wherein the polysiloxane of formula (I) has a kinematic viscosity ranging from 1 to 1 x 10<sup>6</sup> mm<sup>2</sup>/s; and

- (b) at least one silicone compound comprising at least one and not more than two groups capable of reacting with the groups  $R_1$  of the polysiloxane (a), wherein:

- at least one of the compounds of type (a) and (b) comprises an aliphatic group comprising an ethylenic unsaturation,

and optionally rinsing said composition out with water.

83. A process for washing or treating a keratin material according to claim 82, wherein said keratin material is chosen from hair, skin, eyelashes, eyebrows, nails, lips and scalp.

84. A process for manufacturing a cosmetic product comprising including in said product:

(1) at least one conditioner chosen from:

- synthetic oils;

- animal oils;

- plant oils;

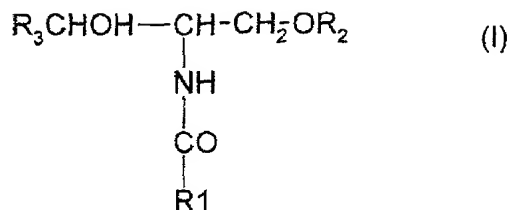
- fluoro oils;

- perfluoro oils;

- natural waxes;

- synthetic waxes; and

- ceramides of formula (I) :



wherein:

-  $R_1$  is chosen from linear and branched, saturated and unsaturated alkyl groups derived from at least one  $C_{14}$ - $C_{30}$  fatty acid, wherein said  $R_1$  is optionally substituted with at least one hydroxyl group in the  $\alpha$  position, and wherein said  $R_1$  may optionally be substituted with at least one hydroxyl group in the  $\omega$  position wherein said at least one hydroxyl group is esterified with at least one group chosen from saturated and unsaturated  $C_{16}$ - $C_{30}$  fatty acids;

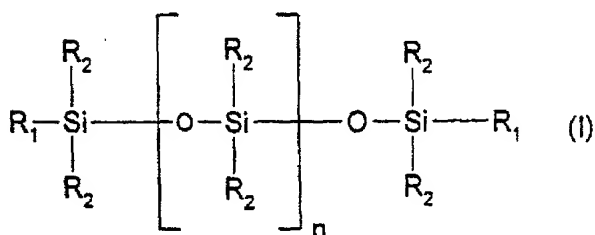
-  $R_2$  is chosen from a hydrogen atom, (glycosyl) $_n$  groups, (galactosyl) $_m$  groups and sulphogalactosyl groups, wherein  $n$  is an integer ranging from 1 to 4 and  $m$  is an integer ranging from 1 to 8;

-  $R_3$  is chosen from  $C_{15}$ - $C_{26}$  hydrocarbon-based groups, optionally saturated in the  $\alpha$  position, wherein said  $R_3$  is optionally substituted with at least one  $C_1$ - $C_{14}$  alkyl group;

with the proviso that when said ceramides of formula (I) are chosen from natural ceramides and natural glycoceramides,  $R_3$  may also be chosen from  $C_{15}$ - $C_{26}$   $\alpha$ -hydroxyalkyl groups wherein the hydroxyl group is optionally esterified with at least one  $C_{16}$ - $C_{30}$   $\alpha$ -hydroxy acid group; and

(2) at least one silicone copolymer with a dynamic viscosity ranging from  $1 \times 10^6$  to  $100 \times 10^6$  cP, resulting from the addition reaction, in the presence of a catalyst, of at least:

- (a) one polysiloxane of formula (I):



in which:

-  $R_1$ , which may be identical or different, are independently chosen from groups that can react by chain addition reaction,

-  $R_2$  in formula (I), which may be identical or different, are independently chosen from alkyl, alkenyl, cycloalkyl, aryl, hydroxyl, and alkylaryl groups, and can optionally further comprise functional groups,

-  $n$  is an integer wherein the polysiloxane of formula (I) has a kinematic viscosity ranging from 1 to  $1 \times 10^6$  mm<sup>2</sup>/s; and

- (b) at least one silicone compound comprising at least one and not more than two groups capable of reacting with the groups  $R_1$  of the polysiloxane (a), wherein:



- at least one of the compounds of type (a) and (b) comprises an aliphatic group comprising an ethylenic unsaturation.

85. A composition according to Claim 1, wherein said synthetic oils are chosen from polyolefins of hydrogenated polybutene type, polyolefins of non-  
5 hydrogenated polybutene type, polyolefins of hydrogenated polydecene type and polyolefins of non-hydrogenated polydecene type.

86. A composition according to Claim 1, wherein said at least one conditioner  
10 is chosen from sunflower oil, corn oil, soybean oil, avocado oil, jojoba oil, marrow oil, grapeseed oil, sesame oil, hazelnut oil, fish oils, glyceryl tricaprocaprylate and plant oils of formula  $R_9COOR_{10}$  and animal oils of formula  $R_9COOR_{10}$ , wherein  $R_9$  is chosen from higher fatty acid residues comprising from 7 to 29 carbon atoms and  $R_{10}$  is chosen from linear and branched hydrocarbon-based chains comprising from 3 to 30 carbon atoms, natural essential oils and synthetic essential oils.

15 87. A composition according to Claim 86, wherein said  $R_{10}$  is chosen from alkyl groups and alkenyl groups.

88. A composition according to Claim 86, wherein said natural essential oils and synthetic essential oils are chosen from eucalyptus oil, hybrid lavender oil, lavender oil, vetiver oil, Litsea cubeba oil, lemon oil, sandalwood oil, rosemary oil, camomile oil,  
20 savory oil, nutmeg oil, cinnamon oil, hyssop oil, caraway oil, orange oil, geraniol oil, cade oil and bergamot oil.

89. A composition according to Claim 1, wherein said at least one conditioner is chosen from carnauba wax, candelilla wax, alfalfa wax, paraffin wax, ozokerite, plant

waxes, absolute waxes of flowers, animal waxes, marine waxes, polyethylene waxes and polyolefin waxes.

90. A composition according to Claim 89, wherein said plant waxes are chosen from olive tree wax, rice wax, and hydrogenated jojoba wax.

5 91. A composition according to Claim 90, wherein said absolute waxes of flowers are chosen from essential waxes of blackcurrant flower.

92. A composition according to Claim 90, wherein said animal waxes are chosen from beeswaxes.

10 93. A composition according to Claim 1, wherein said ceramides of formula (I) are chosen from:

- 2-N-linoleylaminooctadecane-1,3-diol,
- 2-N-oleylaminooctadecane-1,3-diol,
- 2-N-palmitoylaminooctadecane-1,3-diol,
- 2-N-stearylaminooctadecane-1,3-diol,
- 15 - 2-N-behenylaminooctadecane-1,3-diol,
- 2-N-[2-hydroxypalmitoyl]aminooctadecane-1,3-diol,
- 2-N-stearylaminooctadecane-1,3,4-triol
- N-stearylphytosphingosine
- 2-N-palmitoylaminohexadecane-1,3-diol
- 20 and mixtures of any of the foregoing.

94. A composition according to Claim 1, wherein said at least one conditioner is present in an amount ranging from 0.001% to 20% by weight relative to the total weight of said composition.

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ABSTRACT

Cosmetic compositions comprising at least one silicone copolymer with a dynamic viscosity ranging from  $1 \times 10^6$  to  $100 \times 10^6$  cP and at least one conditioner. This combination can give cosmetic properties, such as at least one of smoothness, lightness, and softness, without the phenomenon of regreasing keratin fibers. These compositions can be used for washing and/or conditioning a keratin material, such as the hair or the skin.